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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/052,114	01/17/2002	Levon A. Mitchell	2083.000200/P6639	1644

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B. NOEL KIVLIN
MEYERTONS, HOOD, KIVILN, KOWERT & GOETZEL, P.C.
P.O. BOX 398
AUSTIN, TX 78767-0398

EXAMINER	
LEFLORE, LAUREL E	

ART UNIT	PAPER NUMBER
2673	

DATE MAILED: 02/03/2004

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Time has been Restarted due incorrect Mailing address

KIMBERLY D. SPEARS
SUPERVISORY LEGAL INSTRUMENTS EXMR.
TECHNOLOGY CENTER 2600

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/923,737	08/06/2001	Michael C. Fischer	HP-10981124	2129

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HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, CO 80527-2400

EXAMINER	
ORTIZ CRIADO, JORGE L	

ART UNIT	PAPER NUMBER
2655	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/052,114	MITCHELL, LEVON A.	
	Examiner	Art Unit	
	Laurel E LeFlore	2673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 January 2002* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 1240 in figure 12A. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:

   On page 9, line 9, "210(1-6)" should be "210(1)".

   On page 15, line 20, "Referring now" should be "Referring now to".

   Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

   The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 19 and 26-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 19 recites the limitation "each pin" in line 1. There is insufficient antecedent basis for this limitation in the claim.

6. Claim 26 recites the limitation "the selection" in line 8. There is insufficient antecedent basis for this limitation in the claim.
7. Claim 26 recites the limitation "the processor-based system" in lines 9-10. There is insufficient antecedent basis for this limitation in the claim.
8. Claim 28 recites the limitation "the controller" in line 1. There is insufficient antecedent basis for this limitation in the claim.
9. Claim 28 recites the limitation "the processor-based system" in line 2. There is insufficient antecedent basis for this limitation in the claim.
10. Claim 31 recites the limitation "the sleeve" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 1- 4, 8-10, 15, 16, 18, 20-22, 25, 26, and 28-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Litt et al. 4,752,772.
13. In regard to claim 1, Litt et al. discloses a method for displaying information on the keys of a keyboard. See column 2, lines 57-59, disclosing, "The display comprises a plurality of pins mounted inside the key so that they can be raised and lowered in the key." Litt et al. further discloses that a request is received to change the configuration of the keyboard form a first to a second configuration,

saying (See column, line 68 to column 3, line 2.), "Any desired Braille character can thus be generated by using the proper control signal to activate the appropriate combination of solenoids." Thus, information to display on the keys of the keyboard is determined and displayed in the second configuration, the second configuration being that of activated solenoids.

14. In regard to claim 2, Litt et al. discloses that the displaying of information comprises displaying Braille characters on the keys of the keyboard. (See rejection of claim 1.)

15. In regard to claim 3, see rejection of claim 1. Also see column 2, lines 64-66, disclosing, "When a solenoid is activated, the pin connected thereto rises in the key causing the pin end to extend above the top surface of the key." The top surface of the key is a key cap (See figures 2 and 3, element 12 and column 4, lines 32-34) and thus, displaying information comprises raising one or more pins of the matrix of pins above the key cap to form Braille letters. The pins are formed in a matrix, as disclosed in column 2, lines 59-62, "The ends of the pins rest in holes which pass through the top of the key and which are arranged to yield a two column matrix".

16. In regard to claim 4, Litt et al. discloses that a request is received to change the configuration of the display on the keys to a Braille configuration. See column 3, lines 3-6, disclosing, "To use the key-embeddid Braille display...interface circuitry...is used to generate a control signal which drives the solenoids." Thus,

a control signal from interface circuitry serves as the request to change configuration.

17. In regard to claim 8, Litt et al. discloses that a user selects an option from a configuration panel to change the configuration of the keyboard. See column 3, lines 6-16, disclosing by means of standard cursor controls the user can move the reading cursor about the text" and that the interface circuitry (see rejection of claim 4) generates the control signal causing the keyboard configuration to change by "first identifying, through the use of a reading cursor, a position within text which might normally be displayed". Thus, it is understood that a user might manipulate a cursor with (arrow) keys of a conventional keyboard, causing the configuration of the keyboard to change to the displaying of Braille. Such arrow keys or other "standard cursor controls" on a keyboard would be a configuration panel. Also see figure 1, element 17, depicting arrow keys and column 6, lines 22-25, disclosing, "The user can move the reading cursor to a different location...by means of cursor control circuitry 17 which offers standard up-down, left-right cursor control."

18. In regard to claim 9, see rejection of claims 4 and 8. The "interface circuitry", a processor-based system, generates the control signal which changes the configuration of the keyboard.

19. In regard to claim 10, Litt et al. discloses in column 2, line 68 to column 3, line 2, "Any desired Braille character can thus be generated by using the proper control signal to activate the appropriate combination of solenoids." Also see rejection of

claim 1. Thus, Litt et al. discloses a keyboard with at least one key adapted to display at least two symbols (Braille characters). See column 3, lines 4-6 disclosing "interface circuitry...used to generate a control signal which drives the solenoids." Thus, Litt et al. discloses a control unit that is adapted to display a first symbol in a first mode and a second symbol in a second mode, as the movement of the solenoids generates various Braille characters.

20. In regard to claim 15, Litt et al. discloses in column 3, lines 7-15, "The interface circuitry" is adapted to receive a request to change to the second mode (another Braille character) bye "first identifying, through the use of a reading cursor, a position within text which might normally be displayed on a video screen and then generating a control signal which yields the Braille representation of the information appearing in that position." Thus, the request to change to the second mode is received from the reading cursor.

21. In regard to claim 16, see rejection of claim 8.

22. In regard to claim 18, see rejection of claim 3.

23. In regard to claim 20, Litt et al. discloses a processor enabled to display information on one or more keys of a keyboard in a first mode, receive a request to operate the keyboard in a second mode and display information on the keys of the keyboard based on the received configuration mode, as seen in the rejections of claims 1 and 9. See column 6, lines17-22, in reference to figure 1, disclosing "the circuitry generates a conventional pointer or reading cursor which identifies a user selected location in memory 25. Then the circuitry conveys the

information stored at that location to the Braille display key 10 where it appears as the equivalent Braille representation." Thus, Litt et al. discloses an article comprising one or more machine-readable storage media (memory 25) containing instruction to enable a processor to display on the keys.

24. In regard to claim 21, see rejection of claim 20.

25. In regard to claim 22, see rejection of claim 3.

26. In regard to claim 25, see rejection of claim 9.

27. In regard to claim 26, see rejections of claims 1, 3, and 10. Litt et al. further discloses that the control unit detects the selection of the key and provides information displayed on the key to the processor-based system (interface circuitry) in response to detecting the selection of the key. See column 2, lines 55-56, disclosing, "the modified key functions as a 'J' or 'F' key as well as a Braille display." See column 6, lines 9-11. disclosing, "The system includes a memory 25 for storing the alphanumeric text which is typed in at the keyboard 11 and which is normally displayed on the video screen."

28. In regard to claim 28, see rejection of claim 26. It is understood that a "video screen" is a monitor.

29. In regard to claim 29, see rejection of clam 1.

30. In regard to claim 30, Litt et al. discloses that the key comprises a housing for one or more pins of the matrix. See figures 2-4 and column 4, lines 35-36 and 40, disclosing, "Inside the keycap holder 14 is a cavity 18...Within the cavity 18 are eight pins 22." Thus, the keycap holder is a housing for the pins of the

matrix. Litt et al. further discloses that the housing comprises an upper coil for causing the pins to rise above the top surface of the key. See figure 2-4 and column 5, lines 54-56, disclosing, "Activation of the solenoid 26 causes the corresponding pin 22 to rise in the holder 14 so that the end 22a appears above the top surface 16 of the keycap 12." See element 51 of figure 2-4, depicting a spring (coil) included in the solenoid.

31. Claims 1, 5, 10, 11, rejected under 35 U.S.C. 102(b) as being anticipated by Cairns 4,962,530.

In regard to claim 1, Cairns discloses in column 2, lines 55-60, "The keyboard consists of a matrix of keys and variable visible indicia of integers and letters...the variable visible indicia are shown on display means, such as LEDs, associated with the respective keys." Also see figure 4, depicting the display of indicia on keys. Thus, Cairns discloses a method for displaying information on the keys of a keyboard in which the keyboard is changed from a first to a second configuration, each of the configurations displaying different indicia of integers and letters. Cairns further discloses a request received to change the configuration in column 3, lines 15-19, "The integers and letters...appearing on the LED's change with each display cycle which accompanies the logging-in of a symbol."

32. In regard to claim 5, see Cairns rejection of claim 1. Cairns further discloses that each of the keys includes a matrix of light emitting devices. See column 3, lines

1-3, "The matrix is a display panel which...is made up of 9 matrix locations represented by LED's."

33. In regard to claim 10, see Cairns rejection of claim 1. Also, Cairns discloses a control unit adapted to display the varying integers and letters in column 3, lines 23-26, "cryptographing ROM is programmed to provide to the matrix in predetermined manner the display changes correlated with logging in successively password symbols".

34. In regard to claim 11, see Cairns rejection of claim 1. Further see figure 4, depicting a plurality light emitting devices on the key caps of "a representative keyboard and display panel". (See column 3, line 59.)

35. In regard to claim 20, see Cairns rejections of claims 1 and 10. The cryptographing ROM is a machine-readable storage media. See column 9, lines 37-39, disclosing a microprocessor.

36. In regard to claim 23, see Cairns rejections of claims 1, 5, and 20.

37. In regard to claim 26, see Cairns rejections of claims 1, 5, 10 and 20. Also see column 3, lines 1-2, "The selected symbol is introduced into a microprocessor." Thus, the information displayed on the key is provided to the processor in response to detecting the selection of the key.

38. In regard to claim 27, see Cairns rejection of claim 5.

Claim Rejections - 35 USC § 103

39. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

40. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Litt et al. 4,752,772.

In regard to claim 17, Litt et al. discloses an invention similar to that which is in claim 17. See rejection of claim 10. Also see column 6, lines 9-11, referring to figure 1, disclosing, "The system includes a memory 25 for storing the alphanumeric text which is typed in at the keyboard 11". Litt et al., however, does not include the memory within the keyboard. Instead, it is in the digital data processor 19 (see column 1, line 66).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the memory 25 in the keyboard instead of in the digital data processor. Such an integration is a matter of design choice (in re Larson, 144USPQ 347 (CCPA 1965)).

41. Claims 6, 7, 12-14, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cairns 4,962,530 in view of Levanto 5,016,002.

In regard to claims 6, 12, and 24, Cairns discloses and invention similar to that which is disclosed in claims 6, 12, and 24. See Cairns 102 rejections of claims 1, 10 and 20. See column 1, lines 33-39, disclosing that the buttons on the keyboard can have light emitting diodes or a liquid crystal display. Cairns does not disclose that the display on the keys contains pixels.

Levanto discloses a "16-dot matrix...made up of elements which, for example in a liquid crystal display, are implemented as pixels." (See column 2, lines 65-67.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use pixels in the liquid crystal display of Cairns. One would have been motivated to make such a change based on the teaching of Levanto that dot matrices are implemented as pixels in liquid crystal displays. Also, the use of pixels in liquid crystal displays is conventional.

42. In regard to claims 7, 13 and 14, see 102 Cairns rejection of claim 1. Visible indicia of integers and letters are understood to be graphics. Also see Cairns rejection of claim 26. Introducing a selected symbol into a microprocessor is understood to constitute an input interface.

43. Claims 19, 31, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Litt et al. 4,752,772 in view of van Namen 5,896,076.

In regard to claims, 19, 31, and 32, Litt et al. discloses an invention that is similar to that which is claimed in claims 19, 31 and 32. See rejection of claim 30 for similarities. Also see figures 2-4, element 51 and column 5, line 64-67, disclosing a coil used to lower the pin, causing a top portion of the pin to fall to a position in which it is substantially aligned with the top surface of the key when the pin falls to a preselected level ("rest position"). Litt et al. does not disclose within his solenoid an upper and lower coil adapted to raise the pin or that

energizing the upper coil causes a magnetically movable object to rise below the pins and fall when the upper coil is not charged.

Van Namen 5,896,076 discloses a solenoid containing two coils with magnetic operation. See column 6, lines 43-48, which disclose "applying force to the armature...depends on the direction of the current in the coils." Thus, an armature (pin) can be moved with the magnetically utilizing the charging of coils.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the solenoid of Litt et al., making it a magnetically charged solenoid with two coils. One would have been motivated to make such a change based on the statement of Litt et al. (see column 6, lines 45-49), "Although a linear solenoid actuating mechanism has been described herein, it is well know within the art that other alternative actuating mechanisms with appropriate connecting means could be substituted for linear solenoids and produce substantially the same results."

Conclusion

44. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Mueller 3,934,246 discloses a matrix of light emitting objects on keys.

Gouzman et al. 6,278,441 B1 discloses a matrix of moveable pins to display data.

Roberts et al. 2003/0117271 A1 discloses a display matrix of stimulus points.

45. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laurel E LeFlore whose telephone number is (703) 305-8627. The examiner can normally be reached on Monday-Friday 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on (703) 305-3885. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

LEL

JOSEPH MANCUSO
PRIMARY EXAMINER